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CORRESPONDENCE

Letters to the Editor

Brugada Syndrome or Brugada Electrocardiogram?

We read with great interest the paper by Benito et al. (1) from the Brugada group. The authors confirm that important differences exist between men and women regarding the clinical picture and outcome in patients with Brugada syndrome. In general, in men the clinical picture appears more severe and the outcome is worse. Although this may seem presumptuous, we wonder if all subjects in this study truly had Brugada syndrome, in particular the women. From the paper, it reads as if the diagnosis "Brugada syndrome" is synonymous with the presence of a type-1 electrocardiogram (ECG) (coved-type, either spontaneously or after pharmacologic provocation with a sodium-channel blocker). It is not mentioned whether additional clinical features were required for the diagnosis. According to the consensus statement (2), in addition to a "Brugada ECG" (type-1 ECG), for Brugada syndrome to be definitely diagnosed at least 1 of the following clinical features is required: documented ventricular fibrillation or polymorphic ventricular tachycardia, a family history of sudden death at <45 years of age, coved-type ECGs in family members, inducibility of ventricular tachycardia with programmed electrical stimulation, syncope, or nocturnal agonal respiration. In other words, a Brugada ECG is not sufficient to diagnose Brugada syndrome, and this is a very important point both in clinical practice and in scientific studies. When applying the above criteria to the study by Benito et al. (1), some uncertainty remains. According to Table 2 in their paper (1), in women syncope was present "only" in 15%, aborted sudden cardiac death in 1%, a history of sudden cardiac death in 45%, and programmed electrical stimulation was performed in 81% with inducibility in 12%. If anything, these figures do not add up to 100%. Of note, there was also a difference in the baseline ECG; as many as 62% of the women had a normal or type-3 ECG as opposed to only 25% of the men. Obviously, in subjects in whom the diagnosis of Brugada syndrome is not firmly established, a mild clinical picture and a good outcome can be expected.

***Maarten P. van den Berg, MD, PhD**
Rudolf A. de Boer, MD, PhD
J. Peter van Tintelen, MD, PhD

*Department of Cardiology
University Medical Center Groningen
University of Groningen
P.O. Box 30.001
9700 RB
Groningen
the Netherlands
E-mail: m.p.van.den.berg@thorax.umcg.nl

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Reply

We thank Dr. van den Berg and colleagues for their interest in our article (1) and their valuable comments, which raise important issues regarding the diagnosis of Brugada syndrome. Indeed, a syndrome requires a constellation of symptoms and signs for diagnosis, and a single electrocardiographic finding does not define a syndrome. Dr. van den Berg and colleagues do certainly realize that Brugada syndrome is no longer a syndrome but a disease. After the description of the first mutation in the sodium channel causing Brugada syndrome (2), a multitude of other mutations in the sodium and other channels have been described. It is clear that the consensus report from 2005 (3) is more than outdated and an update is urgently required in terms of both diagnosis and therapeutic approach.

The definite phenotypic manifestation of the Brugada syndrome is the presence of a type-1 electrocardiogram (ECG), either spontaneously or after sodium-blocker challenge. Given that even the sole presence of the ECG pattern has been proven to entail a risk of sudden cardiac death, this was the only prerequisite required in all of our 384 patients included in the study, as stated in the article (1). However, in reply to Dr. van den Berg and colleagues, we must say that most of our patients, both men and women and in similar proportions (82.4% vs. 89.3%, respectively, $p = 0.06$), did fulfill the II Consensus Report definition of Brugada syndrome. Therefore, the better prognosis in women cannot be explained because of their lower rate of "confirmed diagnosis" according to the consensus. As can be drawn from our article, in addition to the type-1 ECG, 66 of the 272 male patients (24.3%) also had symptoms, 82 (30.1%) had a family history of early sudden death, and 84 (31.9%) had documented ventricular fibrillation either spontaneous or inducible at the time of diagnosis. Because these clinical variables tended to meet within the same individual, they resulted in a total of 148 (54.4%) patients. Additionally, in 74 (27.2%) more men, a type-1 ECG was documented in at least 1 family member. Therefore, at the time of their first evaluation, 222 of 272 patients (81.7%) had a confirmed diagnosis of Brugada syndrome according to the II Consensus definition. On the other hand, a total of 100 of 112 female patients (89.3%) fulfilled the Consensus criteria of Brugada syndrome (62 [55.4%] because of symptoms, family history of sudden death, documented ventricular fibrillation, or a combination, and 38 [33.9%] because of none of the others and a presence of type-1 ECG in family members). Importantly, among the 62 patients (50 men and 12 women) who did not meet the II Consensus definition